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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ANTOINE MOULIN

Appeal 2009-014666
Application 10/544,206
Technology Center 1700

Before EDWARD C. KIMLIN, JEFFREY T. SMITH, and BEVERLY A. FRANKLIN, *Administrative Patent Judges*.

FRANKLIN, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

Appellant appeals under 35 U.S.C. § 134 from the Examiner's rejection of claims 1-12. We have jurisdiction under 35 U.S.C. § 6(b).

STATEMENT OF THE CASE

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[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE" (paper delivery mode) or the "NOTIFICATION DATE" (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

Claim 1 is representative of the subject matter on appeal and is set forth below:

1. A process for producing a cold-rolled ferritic/martensitic dual-phase steel strip, wherein a slab, the chemical composition of which comprises, by weight:

$0.010\% \leq C \leq 100\%$

$0.050\% \leq Mn \leq 1.0\%$

$0.010\% \leq Cr \leq 1.0\%$

$0.010\% \leq Si \leq 0.50\%$

$0.001\% \leq P \leq 0.20\%$

$0.010\% \leq A1 \leq 0.10\%$

$N \leq 0.010\%$

the balance being iron and impurities resulting from the smelting, is hot rolled, said process then comprising:

- coiling the hot-rolled strip obtained at a temperature of between 550 and 850°C; then
- cold rolling the strip with a reduction ratio of between 60 and 90%; then
- annealing the strip continuously in the intercritical range; and
- cooling it down to the ambient temperature in one or more steps, the cooling rate between 600°C and the ambient temperature being between 100°C/s and 1500°C/s; and
- optionally tempering it at a temperature less than 250°C,

the annealing and cooling operations being carried out in such a way that the strip finally contains from 1 to 15% martensite.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Chatfield	4,159,218	Jun. 26, 1979
Nakaoka	4,336,080	Jun. 22, 1982

THE REJECTIONS

1. Claims 1-12 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakaoka in view of Chatfield.

ANALYSIS

We essentially adopt the Examiner's findings pertinent to the issues raised by Appellant for this rejection. We add the following for emphasis.

Appellant argues that Nakoaka's steel is not martensite. Appellant states that this is so because the process of Nakaoka requires overaging (i.e. the application of heat), which is expressly excluded from the present invention *(see* page 6, lines 27-39), and thus the steel of Nakaoka does not contain martensite because it is destroyed. Appellants argue that this can be seen from Table 2 of Nakaoka, which shows that the tensile strengths are between 360 and 480 MPa compared to the values obtained for Examples of the present invention, which ranges from 650 to 720 MPa *(see* page 9 of the Specification). Appellants submit that such a difference in tensile strengths shows that the steel of Nakaoka does not contain martensite. Br. 10-11.

We are not convinced by the above-mentioned arguments for the following reasons.

While Nakaoka subjects the cold-rolled steel to an over-ageing treatment, this over-ageing treatment is conducted at a temperature "within the range of from 260° to 360 °C". Nakaoka, col. 3, ll. 24-27.

On page 6 of Appellants' Specification, the Specification indicates that the kind of over-aging treatment that is not used is the kind that is carried out at a temperature between 300° and 500 °C because this kind of over-ageing treatment has the "effect of suppressing the martensite, which is an essential element of the present invention". Hence, Appellants state that martensite is suppressed at temperatures of from 300° and 500°C, but, significantly, not eliminated. Nakaoka conducts the over-ageing treatment within the range of from 260° to 360 °C, which includes a wide range of temperatures that are said not to suppress martensite. This evidence discussed by Appellants therefore does not conclusively show that the claimed amount of martensite, e.g., 1%, would not exist in the final product of Nakaoka.

Appellants also make a comparison with Table 2 of Nakoaka to support their assertion that martensite does not exist in the final product of Nakaoka. However, this comparison does not establish that the tensile strength exhibited in Nakaoka corresponds to the absence of martensite in the product of Nakaoka.

Therefore, we agree with the Examiner's position on page 5 of the answer that the same ferritic and martensite structure would be expected in the steel sheet of Nakaoka in view of Chatfield as in the claimed steel strip.

Beginning on page 11 of the Brief, Appellants also argue that the chemical compounds of Nakaoka and Chatfield are different such that it would not have been obvious to combine the references. We refer to Appellants' comments on pages 11-12 of the Brief in this regard.

In response, we refer to the Examiner's response made on pages 7-9 of the Answer. We add that a particular parameter must first be recognized

as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618, 620 (CCPA 1977); *In re Boesch*, 617 F.2d 272, 276 (CCPA 1980) ("[D]iscovery of an optimum value of a result effective variable . . . is ordinarily within the skill of the art."); *see also In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003) ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages."). In the instant case, Appellants recognize that chromium affects tensile strength as made evident by their statement on page 11 of the Brief that the manganese amount in Chatfield is considered a reduced one, as the addition of chromium does not allow adding more manganese to get the required tensile strength. Since the art shows that the Cr content is recognized as a result effective variable, a *prima facie* case of obvious has been established by the Examiner.

Once an Examiner establishes a prima face case of obviousness, the burden of going forward shifts to the Applicant. *In re Dillon*, 919 F.2d 688, 694 (Fed. Cir. 1990). A prima facie case of obviousness may be rebutted by showing that the art, in any material respect, teaches away from the claimed invention. *In re Geisler*, 116 F.3d 1465, 1471 (Fed. Cir. 1997). Applicant can rebut a presumption of obviousness based on a claimed invention that falls within a prior art range by showing "(1) [t]hat the prior art taught away from the claimed invention . . . or (2) that there are new and unexpected results relative to the prior art." *Iron Grip Barbell Co., Inc. v. USA Sports, Inc.*, 392 F.3d 1317, 1322 (Fed. Cir. 2004).

Appellants argue that Nakaoka seeks a steel with reduced tensile strength which is contrary to the object of Chatfield. Br. 12. Appellants do not adequately explain how the tensile strength of from 35 to 50 kg/mm^2 taught by Nakaoka is "contrary" to the object of Chatfield such that one skilled in the art would have been dissuaded from utilizing the teachings of Chatfield with Nakaoka. Appellants also do not point to new and unexpected results relative to the prior art.

In view of the above, we therefore affirm the rejection.

DECISION

We affirm the rejection.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(v).

AFFIRMED

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